

Abstract

This invention relates to a noise filtering edge detector (NFED) for recovering data carrying edges from a noisy received signal by dense over-sampling of the received signal and by detecting edge phases and edge amplitude limits wherein recovered signal amplitudes at sampling instance defining said edge phase are determined by said edge amplitude limits while recovered amplitudes assumed at sampling instances following the last edge detected are those implementing an ideal signal shape determined by the last edge. The NFED comprises a system for adaptive noise filtering which analyzes captured unfiltered portions of the over-sampled waveform in order to compensate predictable and/or random signal distortions and interferences.

~~The NFED invention provides an implementation of programmable algorithms for adaptive noise filtering from a very wide range of low and high frequency waveforms.~~

~~The NFED shall be particularly efficient for processing NRZ data transmitted over noisy communication links where it shall allow significantly lower SNR than any conventional frequency domain processing.~~